

What is claimed is:

1. A filler material comprising:

(a) from about 60 to 95 percent by weight mineral oil;

(b) less than about 10 percent by weight block copolymer selected from the group consisting of styrene-ethylene/butylene, styrene-ethylene/propylene, styrene-butadiene-styrene, styrene-isoprene-styrene, styrene-ethylene/butylene-styrene, styrene-ethylene/propylene-styrene, and combinations thereof;

(c) less than about 10 percent by weight petroleum wax;

(d) less than about 20 percent by weight hollow glass microspheres; and

(e) less than about 10 percent by weight thixotropic agent selected from the group consisting of clay, colloidal metal oxide, fumed metal oxide, and combinations thereof.

2. The filler material of claim 1, wherein the mineral oil is a paraffinic mineral oil or a naphthenic mineral oil.

3. The filler material of claim 2, wherein the paraffinic mineral oil or a naphthenic mineral oil has less than about 15% aromatic content.

4. The filler material of claim 1, wherein the petroleum wax has a melting point of greater than about 90°C.

5. The filler material of claim 1, wherein the petroleum wax is a polyethylene wax having a melting point greater than about 90°C.

6. The filler material of claim 1, wherein the petroleum wax is a synthetic wax having a melting point greater than about 90°C.

7. The filler material of claim 1, wherein the hollow glass microsphere has a particle size of about 10 to 140 micrometers.

8. The filler material of claim 1, wherein the hollow glass microsphere has a true density of about 0.1 to 0.4 g/cm³.
- 5 9. The filler material of claim 1 where the fumed metal oxide is surface modified fumed silica.
10. The filler material of claim 9, wherein the surface modified fumed silica has substantially hydrophobic surface.
- 10 11. The filler material of claim 1 having a viscosity of less than about 0.2 Pa·s at 110°C and shear rate of 40 sec⁻¹ as measured according to ASTM D-3236.
12. The filler material of claim 1 having a dielectric constant of less than or equal to
15 2.0 at 1 megahertz as measured according to ASTM D-150.
13. The filler material of claim 1 having a melt drop temperature greater than 90°C as measured according to ASTM D-127.
- 20 14. The filler material of claim 1 having a dissipation factor at 1 megahertz of less than 0.001 as measured according to ASTM D-150.
15. The filler material of claim 1 having a volume resistivity at 500 volts of greater than 10¹³ ohm-cm as measured according to ASTM D-257.
- 25 16. The filler material of claim 1 has a minimum viscosity, as described by the Power Law Fluid parameters, where the “n” value is 0.8 and the “k” value is 0.25Pa·s.
17. The filler material of claim 1 has a maximum viscosity, as described by the Power
30 Law Fluid parameters, where the “n” value is 0.2 and the “k” value is 7.0 Pa·s.

18. An electrical cable comprising the filler material of claim 1.

19. A filler material comprising:

- 5 (a) from about 80.0 to 85.0 percent by weight mineral oil;
- (b) about 2.5 percent by weight styrene-ethylene/butylene-styrene block copolymer;
- (c) about 3.0 percent by weight petroleum wax;
- (d) from about 6.0 to 11.5 percent by weight hollow glass microsphere;
- 10 (e) about 3.0 percent by weight surface modified fumed silica; and
- (f) about 0.2 percent by weight antioxidant or stabilizer.

20. The filler material of claim 19, wherein the hollow glass microsphere has a true density of about 0.125 to 0.220 g/cm³.

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21. The filler material of claim 19, wherein the hollow glass microsphere has a particle size of 65 to 120 micrometers.

22. The filler material of claim 19, wherein the antioxidant or stabilizer is selected from the group consisting of phenols, phosphites, phosphorites, thiosynergists, amines, benzoates, and combinations thereof.

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23. An electrical cable comprising the filler material of claim 19.

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